Z-OVR

Cable Impedance Test System

Features

- Measure impedance of overhead lines and underground cables
- Direct readout of cable Z & X
- Phase angle display
- Voltage up to 300V
- Current up to 80A
- Data storage to CSV file on a USB memory key
- Digital true RMS memory ammeter & voltmeter
- Solid state switching
- Rugged, compact design

The Z-OVR is a cable impedance test system for the measurement of impedance of overhead lines and underground cables. The system consists of a separate control unit containing all metering and control functions and an output transformer that provides isolation of the output current and feedback voltage.

A current is injected into the line under test and the resultant magnitude and phase angle of the voltage across the line is measured. The current, voltage, phase angle and impedance of the line (Z & X) under test are displayed. In addition, the harmonic content of the voltage and current can be displayed.

The unit has data logging facilities using a standard USB memory key. Date, time, current, voltage, phase angle, and frequency are stored to a CSV file on the memory key along with a comment entered using the supplied USB keyboard. Pressing the “store” pushbutton causes a new set of values to be written to the CSV file.

The output has three taps (75V, 150V & 300V), allowing the measurement of impedance of a wide range of lines and cables. Four current ranges (2.000, 10.00, 20.00 and 100.0A) and two voltage ranges (30.00V and 300.0V) are provided.

The output transformer unit uses 6mm safety connectors for all outputs and 4mm safety connectors for inputs. A block of connectors is provided adjacent to the output to allow easy parallel connection of cables for parallel measurements on all three phases.

The unit is provided with a set of four 10m 12mm² duplex measurement cables. These provide a 12mm² conductor for current injection and a 6mm² conductor for voltage feedback in each cable. All metering is true rms.

T&R TEST EQUIPMENT

TRUSTED & RELIABLE

Z-OVR Specification

The AC output current and load voltage are measured by a true RMS metering system with hold facility. All readings are held when the output is switched off. Four current ranges and two voltage metering ranges are provided.

Range	Full scale	Resolution	Accuracy
2A	2.000A	0.001A	±1%rdg+5d
10A	10.00A	0.01A	±1%rdg+5d
20A	20.00A	0.01A	±1%rdg+5d
100A	100.0A	0.1A	±1%rdg+5d
30V	30.00V	0.01V	±1%rdg+5d
300V	300.0V	0.1V	±1%rdg+5d
Phase	0-±180.0°	0.1°	±1°

Output ratings

		Current rating	
Output	Continuous	5 min on	Maximum
75V 80A	40A	80A	80A
150V 40A	20A	40A	40A
300V 20A	10A	20A	20A

Protection and Safety

Isolation is provided on all outputs and inputs to be connected to the line under test.

The Z-OVR system is CE marked and is designed to meet the requirements of BS EN61010. The system is protected by electronic trips on the outputs, circuit breakers on the mains input and output. The unit also has a duty cycle trip on the loading unit output and comprehensive thermal protection.

Data Storage

All test results from the Z-OVR can be stored on a USB memory key. The unit has a real-time clock to time and date-stamp all results. To log results first enter a comment for the results using the USB keyboard, and then select 'auto store'. Whenever the 'store' key is pressed the current, voltage and all other parameters are added to a spreadsheet file on the memory key. The current set of results can be viewed on the display.

All results are stored in a folder on the USB key named with the test date in a file named with the time. In addition, the Z-OVR can store the voltage and current waveforms to the USB key in CSV format.

Dimensions

		Weight
Z-OVR	450(w) x 275(h) x 305mm(d)	26kg
NLU75/80	450(w) x 275(h) x 330mm(d)	50kg

Temperature Range

Storage -20°C to 60°C Operating 0°C to 45°C

Supply Requirements

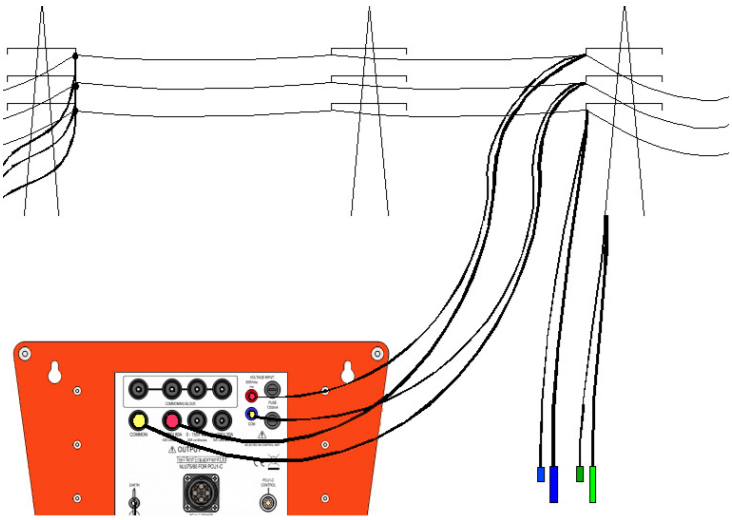
230V±10% 45-65Hz 1ph 7kVA max

Standard Accessories

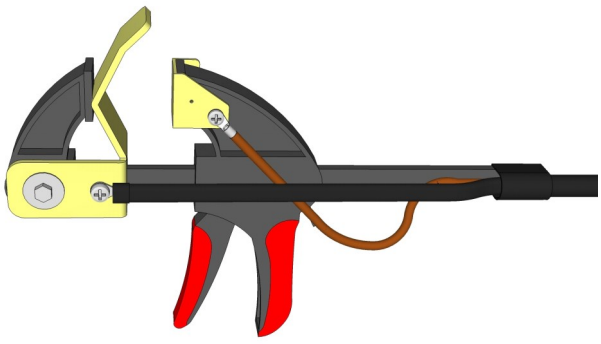
Mains lead (5m).
Power and metering interconnection leads (5m).
Earth lead.
3 x 10m overhead line Kelvin connection leads.
1 x 10m earth Kelvin connection lead.
Link lead to connect output to parallel connection block.
USB keyboard, USB memory key.

Sample data stored to USB key

```
"Z-OVR","V0.12","C00","P1","A1"
"Time","Date","Amps","Volts","Phase","Freq Hz","Z","X","Comment"
"11:18:40","21/12/17","10.00","1.000","90.0","0.1000","0.1000","Cable Sub xx to yy phase A-B"
"11:19:42","21/12/17","10.00","1.000","90.0","0.1000","0.1000","Cable Sub xx to yy phase B-C"
"11:20:49","21/12/17","10.00","1.000","90.0","0.1000","0.1000","Cable Sub xx to yy phase C-A"
"11:20:49","21/12/17","10.00","1.000","90.0","0.1000","0.1000","Cable Sub xx to yy ABC-E"
```



Phase A to phase B impedance test



Overhead line Kelvin connection clamp

Note: Due to the company's continuous research programme, the information above may change at any time without prior notification. Please check that you have the most recent data on the product.

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